

What is claimed is:

1. A control shaft for coupling a user interface having a post lacking cylindrical symmetry to a platform that supports a standing user of a personal transporter, the control shaft comprising:
  - 5           a. an upper shaft segment having an inner bore lacking cylindrical symmetry for receiving the post of the user interface; and
  - b. a stem fastener for causing attachment of the post of the user interface to the upper shaft segment.
- 10    2. The control shaft of claim 1, wherein an inner surface of the upper shaft segment and an outer surface of the post have a plurality of lobes.
3. The control shaft of claim 2, wherein the inner surface of the upper shaft segment and the outer surface of the post have three lobes.
- 15    4. The control shaft of claim 2, wherein a cross-sectional profile of the inner surface of the upper shaft segment is similar to a cross-sectional profile of the outer surface of the post.
- 20    5. The control shaft of claim 2, wherein a cross-sectional profile of each lobe of the inner surface of the upper shaft segment has a radius of curvature greater than the radius of curvature of a cross-sectional profile of an outer surface of the upper shaft segment.
6. A control shaft for coupling a user interface to a platform that supports a standing
  - 25    user of a personal transporter, the control shaft comprising:
    - a. a lower shaft segment having at least one rib on an interior surface that extend parallel to an axis of the lower shaft segment and having an exterior surface;
    - b. an upper shaft segment, with first and second apertures, coupled to the lower shaft segment;
    - 30        c. a first ring, circumferentially coupled to the exterior surface of the upper shaft segment, having at least one groove substantially parallel to an axial direction for meshing with the rib of the interior surface of the lower shaft segment and a first tab that fits within the first aperture of the upper shaft segment; and

d. a second ring, circumferentially coupled to the exterior surface of the upper shaft segment, having at least one groove for meshing with the rib of the interior surface of the lower shaft segment and a second tab that fits within the second aperture.

5 7. The control shaft of claim 6 wherein a circumferential width of the first aperture is greater than a circumferential width of the second aperture.

8. The control shaft of claim 7, wherein the first aperture is closer to the user interface than the second aperture.

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9. The control shaft of claim 7, wherein a width of the first aperture unfilled by the first tab is greater than a width of the second aperture unfilled by the second tab.

10. The control shaft of claim 8, wherein the first and the second ring are made of a plastic.

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11. A control shaft/user interface assembly for coupling a user interface having an asymmetric cylindrical post to a platform that supports a standing user of a personal transporter by means of a control shaft having an upper shaft segment and a lower shaft segment, the control shaft/user interface assembly comprising;

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- a. a pin projecting from an interior surface of the upper shaft segment; and
- b. a non-rectilinear groove in an outer surface of the asymmetric cylindrical post that meshes with the pin.

25 12. The control shaft of claim 11, wherein the groove comprises a first portion parallel to an axis of the upper shaft segment, a second portion perpendicular to the upper shaft segment axis, and a third portion parallel to the upper shaft segment axis.

13. A control shaft for coupling a user interface to a platform that supports a standing user of a personal transporter, the control shaft comprising:

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- a. a lower shaft segment;
- b. an upper shaft segment partially fitting within the lower shaft segment;
- c. a ferrule fixedly attached to the lower shaft segment and containing a plurality of wedges;

- d. a nut fitting over the upper shaft segment and reversibly attached to the ferrule; and
- e. a sealant disposed between the ferrule and the upper shaft segment.

5 14. A control shaft for coupling a user interface to a platform that supports a standing user of a personal transporter, the control shaft comprising a coiled cord passing through the control shaft between the platform and the user interface.

15 15. The control shaft of claim 14, wherein the coiled cord contains a plurality of electrical cords.

16. A method for protecting a control shaft containing an upper shaft segment encircled by a first and second ring and a lower shaft segment for coupling a user interface to a platform that supports a standing user of a personal transporter, the method  
15 comprising:

- a. breaking the first ring upon application of excessive torque to the upper shaft segment; and
- b. allowing limited relative rotation between the upper control shaft segment and the lower control shaft segment by means of the second ring.

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17. A method for protecting a standing user of a personal transporter that includes a platform and a control shaft/user interface assembly, the method comprising delivering an audio tone confirming attachment of the control shaft/user interface assembly to the platform.

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18. A method for attaching a control shaft for a personal transporter having an asymmetric cylindrical inner surface and bore and a pin with an end projecting into the bore to a user interface having a grooved post with an asymmetric cylindrical outer surface and a rotatable stem, the method comprising the steps of:

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- a. positioning the end of the pin in the groove;
- b. moving the control shaft and the user interface toward each other as the end of the pin remains in the groove;
- c. rotating the control shaft and the user interface relative to each other as the end of the pin remains in the groove;

- d. moving the control shaft and the user interface toward each other as the end of the pin remains in the groove; and
- e. rotating the stem so as to engage the post with the control shaft.

5 19. A method for adjusting the height of a control shaft having an upper shaft segment and a lower shaft segment for coupling a user interface to a platform that supports a standing user of a personal transporter, the method including the steps of:

- a. positioning the upper shaft segment partially within the lower shaft segment;
- 10 b. passing a nut over the upper shaft segment; and
- c. rotating the nut about a ferrule having wedges and attached to the lower shaft segment so as to engage the nut with the ferrule, compress the wedges against the upper shaft segment, and provide resistance to upper shaft motion with respect to the lower shaft and to water ingress.

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20. The method of claim 19, wherein resistance is provided by elastomeric material permanently affixed to inside surfaces of the wedges.

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